

RS-3D Log Scanner

RS-3D Log Scanner is a high performance scanner measuring the real shape of your logs to enabling maximum return. With close intervals, the entire surface area is recorded with the help of hundreds of thousands of measurement points. The 3D scanner covers most needs for log sorting, sawmill intake, sawing machine control, log turning etc.

RS-3D Log Scanner gives you:

- A high performance scanner. The system manages a very high conveyor speed, which makes it the obvious choice in advanced operations.
- Full measurement of the ovality, taper and sweep. Damages and twigs are considered.
- A scanner to use for log sorting, sawing machine settings, log turning at the saw line in-feed.
- Possibility to measuring bark thickness. By including RS-Bark, the log's actual shape under the bark is measured. Also, log sorting can be made on the required cut pattern making diameter classification unnecessary.
- Minimum requirements for support and service. Simple calibration and replacement of measurement units without expert help from the supplier.
- Reliable operation minimises production stops. Easy access to the measurement units during operation.

Measurement Units

The log scanner is built around three or four measurement units depending on configuration, where each unit is factory calibrated, comprising a line laser, cameras, optics and a micro processor. The cameras contain a micro processor and software, which pre-execute measurement data from the camera image. This offloads the image processing in the system's PC to ensure a fast operation.

Technique

Data from the four measurement units are transmitted via the network to a PC, which compiles a measurement profile. Normally, 300-600 measurements per second are performed. On a 4.5 meter log and a conveyor speed of 100 meters per minute, hundreds of thousands of measurement points are recorded. The camera technique makes it possible to make up to 15,000 measurements per second.

The log scanner delivers compressed and filtered data. The filtering removes all irrelevant data, e.g. measured conveyor carriers. This enables the system to make fast log data calculations like bark thickness, log turning angle and optimisation of the cut pattern.

Calibration

The 3D scanner is easy to calibrate thanks to a template (included). This is positioned in the measurement area. Since the scanner generates visible laser beams, it's easy to position the template in the correct position. The shape of the template is pre-programmed into the scanner and when it's placed in the measurement area, the calibration is performed automatically.

Maintenance

Calibration and service can be handled by any operator without requiring expert help. Also, replacing a measurement/camera unit is simple since no mechanical parts are affected.



Technical Facts

Measurement accuracy diameter	+/-1 mm
Measurement accuracy length	+/-20 mm
Min diameter	100 mm
Max diameter	600 mm
Min length	1000 mm
Max length	9000 mm

Conditions

- Automatic log turning: Min distance between the scanner and the log turner is max log length +2 meters at a conveyor speed of 100 meters per minute.
- Direct or indirect sunlight or other sharp light must not hit the measurement area within the camera's field of view or the inside of the scanner.
- The log must not shake or move in other directions than the feed direction during the measurement session.
- The scanner's surrounding temperature must be in the range of 0 to 40°C.